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Nevada Environmental Coalition

Fax

To:	Carol M. Browner, EPA Admin.	**From:**	Robert W. Hall
Fax:	1-202-260-0279	**Pages:**	5
Phone:	1-202-260-4700	**Date:**	8-19-97
Re:	Ammonium Perchlorate	**CC:**	

☐ Urgent ☐ For Review ☐ Please Comment ☑ Please Reply ☐ Please Recycle

• **Comments: FORMAL COMPLAINT AND PETITION**

Ammonium perchlorate (rocket fuel oxidizer) has been found in the Las Vegas Wash that leads into Lake Mead. Perchlorate levels as high as 1,700 ppb have been found in the wash. Lake Mead water and nearby wells are reported to have levels of zero to 47 ppb. The state's EPA head has confirmed that the state has known since studies that were conducted between 1970 and 1974 that perchlorate was known to be in shallow ground water layers in the industrial area near Henderson. The Colorado River and Lake Mead serves as a drinking water source for somewhere between 11 and 32 million people in Nevada, Arizona, and Southern California.

Current guidelines for chemical detection in potable water are grossly inadequate and insufficient to assure the public that their drinking water is safe. We are distressed that false information, information that has no credible scientific basis, is being disseminated to the public under the EPA label. There is no credible scientific basis for any statement that any amount of ammonium perchlorate in potable water is safe. I call your attention to the federal EPA's 1992 and 1995 data where the National Center for Environmental Assessment addressed the issue properly to point, and then erred in issuing a provisional RfD without credible scientific support. We all now know that perchlorate may damage the thyroid gland, cause fatal bone marrow defects, and may cause thyroid cancer. Assaults on the thyroid and bone marrow are particularly bad news for Nevada citizens as a result of the decades of atomic bomb testing.

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To:	Lew Dodgion, NEPA	**From:**	Robert W. Hall
Fax:	687-4670	**Pages:**	5
Phone:	687-5856	**Date:**	8-19-97
Re:	Ammonium Perchlorate	**CC:**	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☑ **Please Reply** ☐ **Please Recycle**

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In support of our statement on safety, we submit Joan S. Dollarhide's October 23, 1995 cover letter and review (Review of Proposed RfD for Perchlorate) addressed to Mike Girrard, Chairman, Perchlorate Study Group. The review correctly admits that "there are many questions about the chronic effects of perchlorate left unanswered by the existing data. The series of studies that identified a human Frank Effects Level at doses ranging from 6-14 mg/kg/day is particularly troubling. Thus, until adequate chronic data is available that addresses the effects of perchlorate n the hematopoietic system, we feel that the appropriate provisional RfD is in the range of 1 to 5E-4 mg/kg/day." (RfD, resulting reference dose.)

There are other problems. The studies done to date were done almost entirely on potassium perchlorate, not ammonium perchlorate. The difference could be important in immunotoxicological studies which are missing from the EPA data. The 1995 EPA review admits that most perchlorate "studies are of limited value in developing a chronic RfD." The 1995 review admits that with one exception, the studies (p. 1), "are limited by the fact that the doses tested were not at levels low enough to identify NOAELs and that no organs, tissues, or endpoints other than thyroid were examined." (NOAEL, no observable adverse effect level.) The one exception was criticized as not being "reported and/or translated well enough to be useful for risk assessment." The review noted that "[i]n addition, there are no reproductive or multigenerational studies." "In summary, the studies by Brabant and the cluster of studies showing fatal aplastic anemia clearly show that the duration of exposure affects response. Thus the database for perchlorate is severely limited by the fact that there is no chronic study which is conducted at levels low enough to demonstrate a NOAEL and which examines the full range of potential toxicities. P. 2, "... [N]o other studies, except Shigan (1963), even looked for effects other than thyroid. Given that several human studies show fatal bone marrow effects at the same dose levels at which thyroid effects are observed, it is possible that subtler bone marrow toxicity would be observed at even lower doses. Thus, without additional data, it is difficult to state with certainty that the critical effect has been identified." "In addition, the PSG report first defines the critical effect and then finds the studies that demonstrate the effect. This is not appropriate." (PSG, Perchlorate Study Group.)

The 1995 review went on to criticize the Perchlorate Study Group for recommending a 12 mg/kg/day dose from a particular study as "not an appropriate choice for several reasons." One reason was that several studies noted effects at lower doses than the particular study chosen. Far worse, the 1995 review pointed out that the 12 mg/kg/day dose "is not appropriate because this dose is higher than doses which have resulted in human deaths from aplastic anemia resulting from perchlorate exposure." The 1995 review criticized a reference to "all known toxicities of perchlorate to other target organs such as the ... hematopietic system are probably mediated by thyrotoxicity."... where no scientific evidence was presented to support

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the statement and none of the papers reviewed for this report address this issue. Further the author of the review "was not able to find evidence to support this statement after a limited search through the literature." The 1995 review cautioned, "Before we can disregard the effect of perchlorates on the bone marrow for risk assessment purposes, there needs to be much stronger evidence that the thyroid effects and bone marrow effects are directly linked."

The 18 ppb temporary California limit for consuming water that contains perchlorate comes from risk assessment computations that are essentially guesses. The 1995 review continued, "The PSG report states that the only uncertainty factor needed is a factor of three to account for sensitive subpopulations." (Note: as opposed to the original factor of 10 which resulted in a 4 ppb temporary California limit.) "This is not consistent with EPA's approach. An uncertainty factor accounting for the extrapolation from less than lifetime studies would be required because all of the studies which identified NOAELs are acute or sub-chronic studies. An uncertainty factor for database deficiencies is required to account for data limitations including limited data on sub-chronic and chronic exposure to *low* doses of perchlorate, limited data on other organ systems, limited data on the effects on the hematopoietic system, and lack of reproductive and multigenerational data. A full uncertainty factor of 10 should be considered to protect sensitive sub-populations which would include groups not considered in the PSG report such as hypothyroid patients and individuals with low iodine diets or with genetically impaired iodine accumulation." There is a total absence of immunotoxicology studies or data which usually show toxic chemical effects not at the part per billion (ppb) level but at the part per trillion (ppt) level.

For the reasons given, we request that you answer the following questions on behalf of your agency.

1. Does the EPA have any scientific data other that data referenced herein that supports with credible science, a provisional RfD? If so, please provide the data. (Note: Where the word "scientific" is used herein, we mean to include immunotoxicology in the definition of that word.)

2. Does the EPA agree that the only ethical answer to the toxicity of perchlorate question is that there is not enough data to answer perchlorate toxicity questions with any answer other than, we don't know?

3. Are there any circumstances where the EPA supports the delivery of ammonium perchlorate or rocket fuel oxidizer contaminated drinking water to consumers? If so, what are they?

4. Is the EPA's water contaminant scientific research based upon the discipline of toxicology or immunotoxicology? Please explain your answer.

5. Does the EPA agree that with regard to press releases and public statements, the words "trace," "tiny," "small," or "one part per billion is equal to one drop in a 55,000-gallon container," or similar words are scientifically misleading and not useful in bringing clarity to

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toxic chemical issues, particularly from the immunotoxicological point-of-view. Stating this another way, aren't such words more appropriate to a program of disinformation than to an EPA information release or statement?

6. Does the EPA agree that finding a provisional RfD for perchlorate was a scientific and ethical error?

7. Does the EPA intend to take regulatory action to stop California from using the 18 ppb provisional RfD?

8. Are contaminants such as ammonium perchlorate lawful at any level in potable water pursuant to current EPA regulations or statutes? If so, please identify these statutes or regulations.

9. Is the EPA aware of the study conducted in Nevada between 1970 and 1974 that found perchlorate in shallow ground water layers in the industrial area near Henderson, Nevada? If so, what did the EPA do about that finding from that point to this date?

10. Does the EPA agree that the current situation requirements immediate and decisive cleanup action?

11. Does the EPA agree that pechlorate plants should not be located anywhere they can theoretically contaminate a potable water supply?

12. Does the EPA agree that breathing water vapor in a shower containing perchlorate theoretically may more dangerous than drinking the same water as a result of the more immediate access to the blood stream through the lungs?

13. Does the EPA have any scientific or other information to indicate the type of municipal and home water cleansing units that may be effective against perchlorate?

14. Is the EPA aware that the poor and many so-called middle-income families in Nevada probably do not have access to reverse osmosis water decontamination units? What does the EPA recommend with regard to that fact that public buildings including schools and hospital, commercial businesses including restaurants, and government building do not have reverse osmosis units for their drinking water? Are those who drink from R/O units taking less risk than those who must drink from the facilities listed above?

15. There is evidence that perchlorate may have contaminated Las Vegas drinking water since WWII. Does the EPA intend to investigate the failure of municipal officials and agencies to regularly test for perchlorate since the contamination information was either known to them, or should have been known to them?

16. What role has the EPA had in detecting perchlorate in Las Vegas water since the EPA's inception? Please provide us with copies of all EPA data that supports your answer to that question.

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17. What is the EPA's position on one state using another state's provisional RfD in a situation such as the current perchlorate situation?

18. Will the EPA become financially and legally involved in a Las Vegas clean-up of perchlorate.

19. What are the synergistic effects of perchlorate with other toxic chemicals known to be in the Colorado River and Lake Mead?

20. Tests are showing high levels of Radon in Las Vegas potable water. What is the EPA's position on the issue of Radon in combination with perchlorate?

21. On what credible scientific basis have assurances been given to the parents of children and pregnant women regarding perchlorate?

22. Does the EPA intend to take action against the person or persons who are responsible for perchlorate being in the Colorado River and Lake Mead?

23. What testing frequency does the EPA consider adequate for perchlorate under the circumstances related herein?

24. What wells should be closed in the Las Vegas Valley as a result of perchlorate?

25. Does the EPA, or does the EPA know of any other federal agency that is in a position to brief the medical community in Las Vegas with regard to health issues in relation to perchlorate?

26. Does the EPA have or does the EPA intend to set up a registry to report those suspected to have health effects from perchlorate? If not, why not?

10+1

SPECIAL SPECIAL

EPA

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CONTROL SLIP

DUE DATE:
ORIG. DUE DATE: ~~09/04/97~~ > 9/8

CONTROL NO: AX-9708565

STATUS: PENDING

CORRES. DATE: 08/19/97
RECEIVED DATE: 08/20/97
ASSIGNED DATE: 08/20/97
CLOSED DATE:

FROM: HALL ROBERT W

ORG: NEVADA ENVIRONMENTAL COALITION

SALUTATION: DEAR MR. HALL

CONSTITUENT:

TO: ADMINISTRATOR
TO ORG: EPA

SUBJECT: QUESTIONS (26)-AMMONIUM PERCHLORATE IN POTABLE DRINKING WATER

ASSIGNED: ~~OFFICE of~~ WATER
COMMENTS: OW - HECD

Felicia

SIGNATURE: ~~ASSISTANT ADMINISTRATOR~~

INSTs: PREPARE REPLY FOR THE ASSISTANT ADMINISTRATOR'S SIGNATURE.
SEND COPY OF REPLY TO OEX.

ADDTN'L INST:

CC's:
ADMINISTRATOR
DEPUTY ADMINISTRATOR
ENFORCEMENT & COMPLIANCE ASSURANCE
GENERAL COUNSEL
POLICY, PLANNING & EVALUATION
PREVENTION, PEST & TOXIC SUB
RESEARCH & DEVELOPMENT
SOLID WASTE & EMERG RESP
REGION 09

IMS: JANICE POOLE
IMT: JANICE POOLE

	Assigned	Date Assigned	Code/Status	Date Completed by Assignee	Date Returned to OEX:
Lead	OW	08/20/97	ACTION	-	-